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TITLE: SEMICONDUCTOR DEVICE AND ITS MANUFACTURE

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INVENTOR-INFORMATION:

NAME

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NAME

COUNTRY

SEMICONDUCTOR ENERGY LAB CO LTD

N/A

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ABSTRACT:

PROBLEM TO BE SOLVED: To provide a thin film transistor containing high characteristic by using metal element which promotes crystallization of silicon.

SOLUTION: Areas of codes 101 and 102, and areas of codes 108-110 are doped with nickel element selectively in the surface of an amorphous silicon film 103. And, by performing heat treatment, growth (horizontal growth) parallel to a substrate as shown with codes 104-107 is performed. At this time, the areas 108-110 whose width are made into 5 $\mu$ m or below act as stopper areas, so that the lateral growth from the areas 101 and 102 stop. In such a way, the horizontal growth area is provided by controlling. And a circuit such as a shift resistor, etc., can be constituted by areas provided with the same crystal growth form.

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